FIG. 1

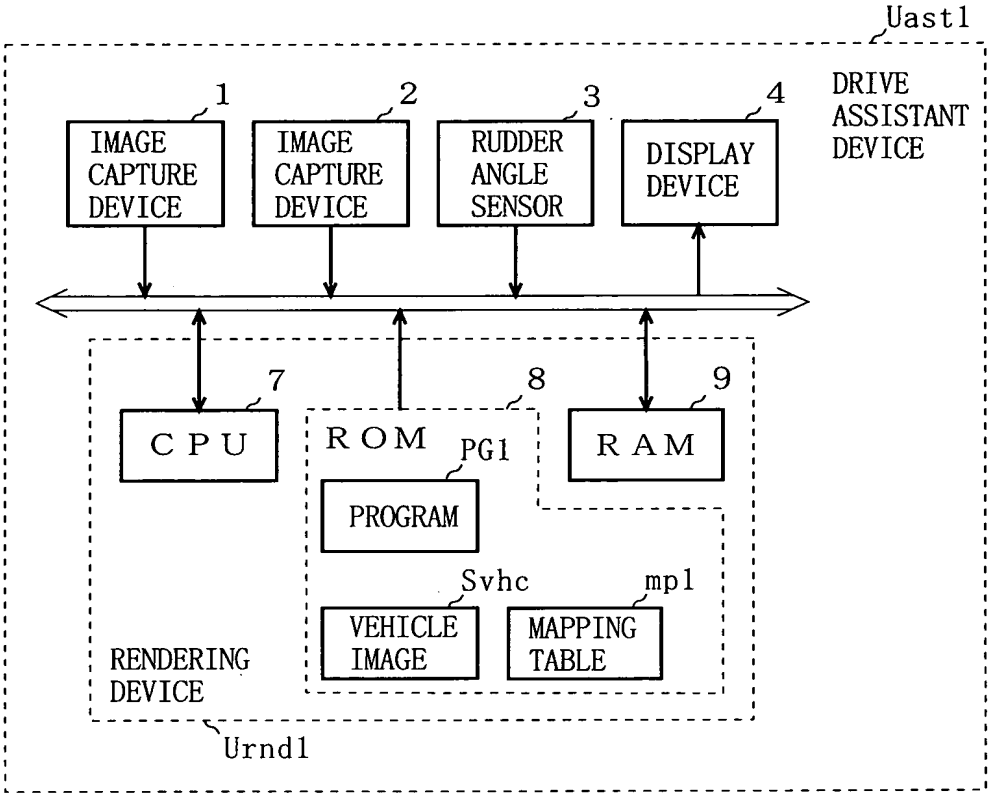
Uast1
DRIVE ASSISTANT DEVICE
1
IMAGE CAPTURE DEVICE
2
IMAGE CAPTURE DEVICE
3
RUDDER ANGLE SENSOR
4
DISPLAY DEVICE
7
CPU
8
ROM
PG1
PROGRAM
Svhc
VEHICLE IMAGE
mp1
MAPPING TABLE
9
RAM
RENDERING DEVICE
Urnd1

FIG. 2

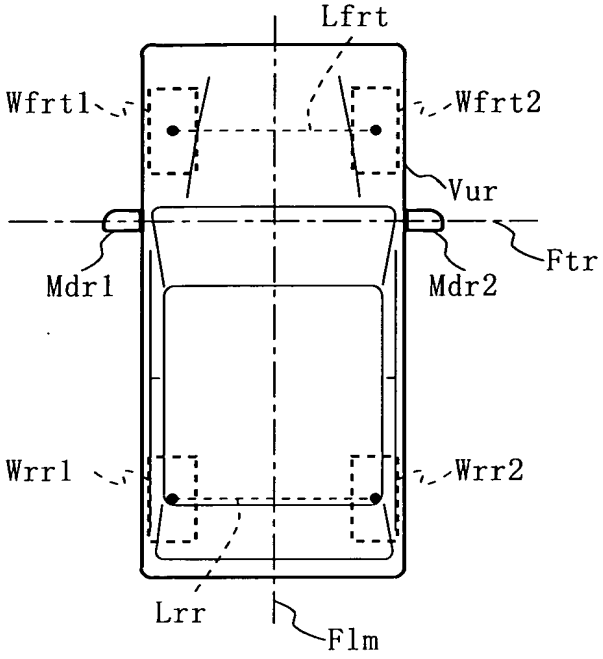

FIG. 3

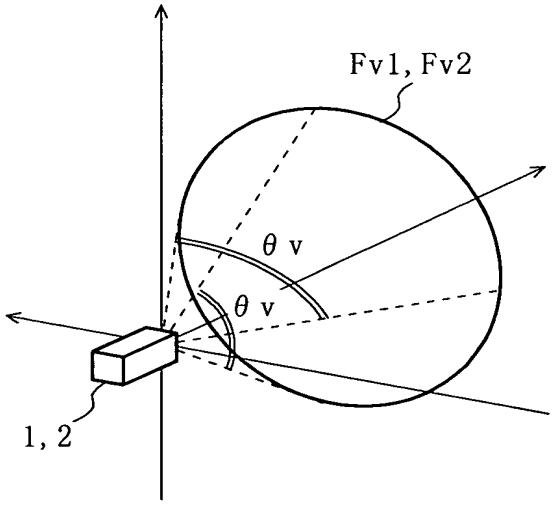

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FIG. 4

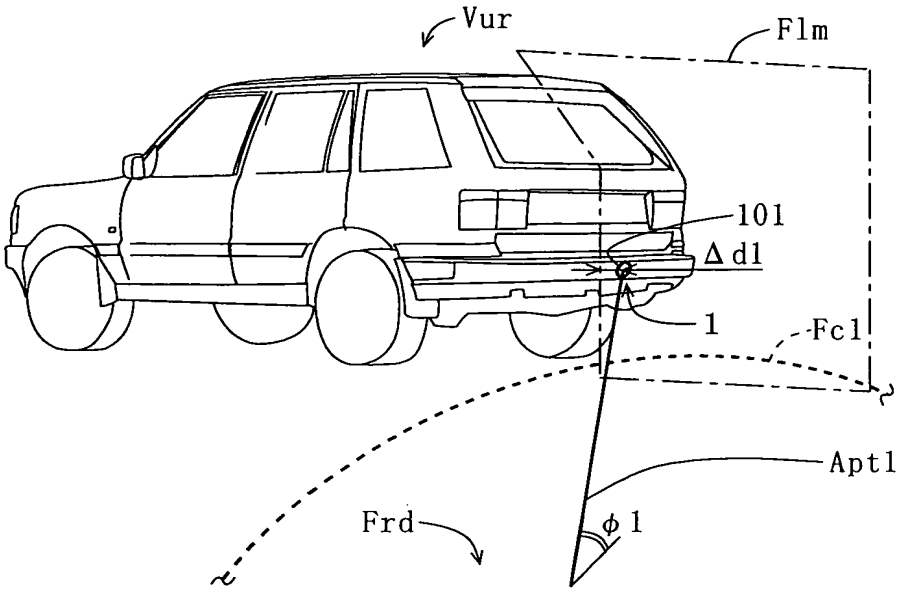

FIG. 5

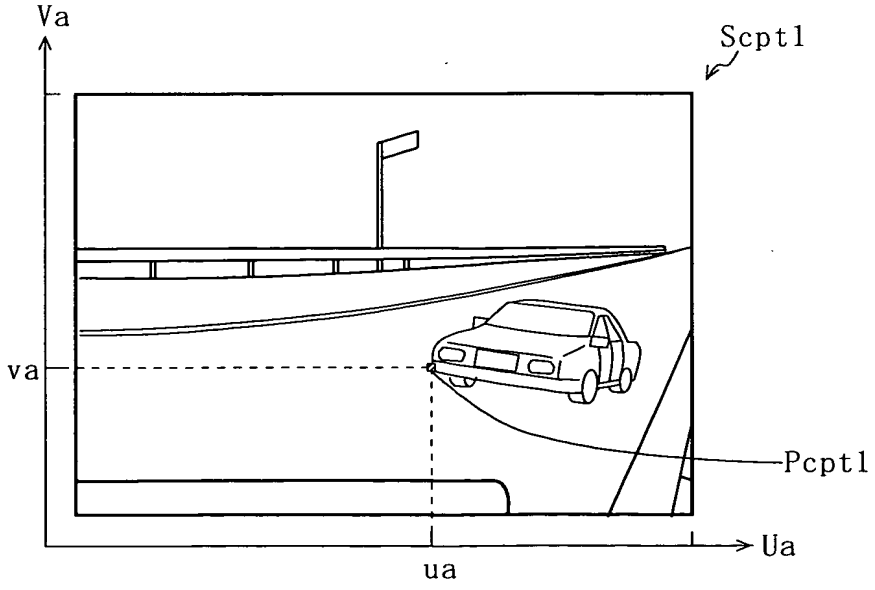

FIG. 6A

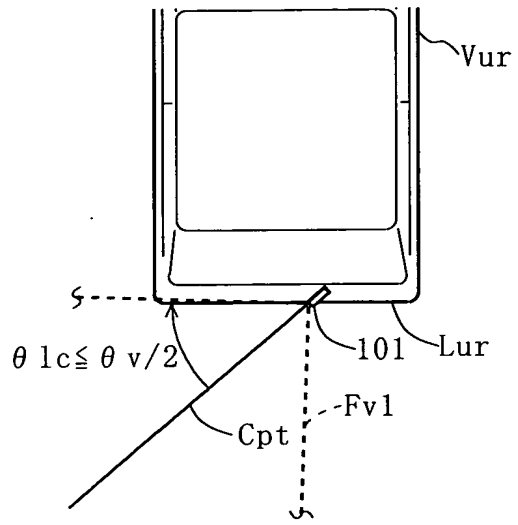

FIG. 6B

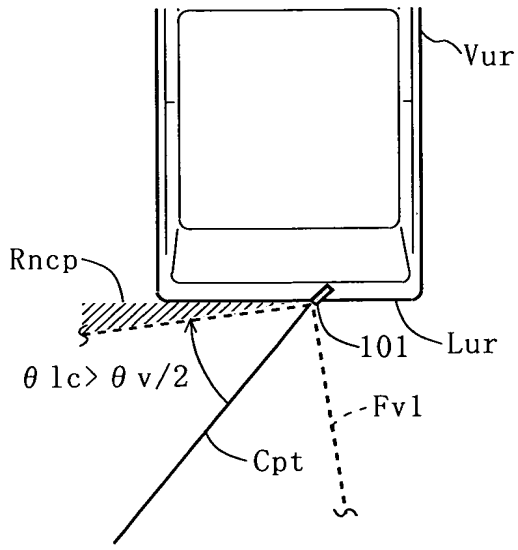

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FIG. 7

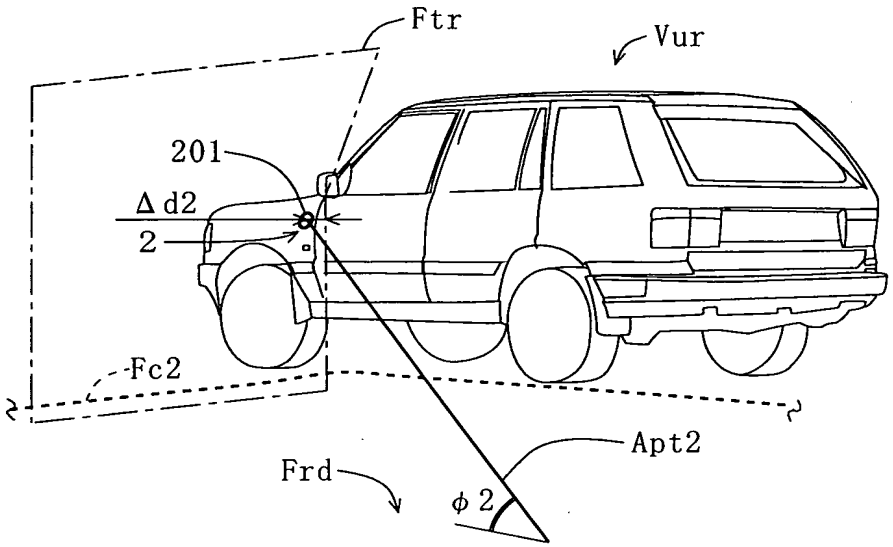

FIG. 8

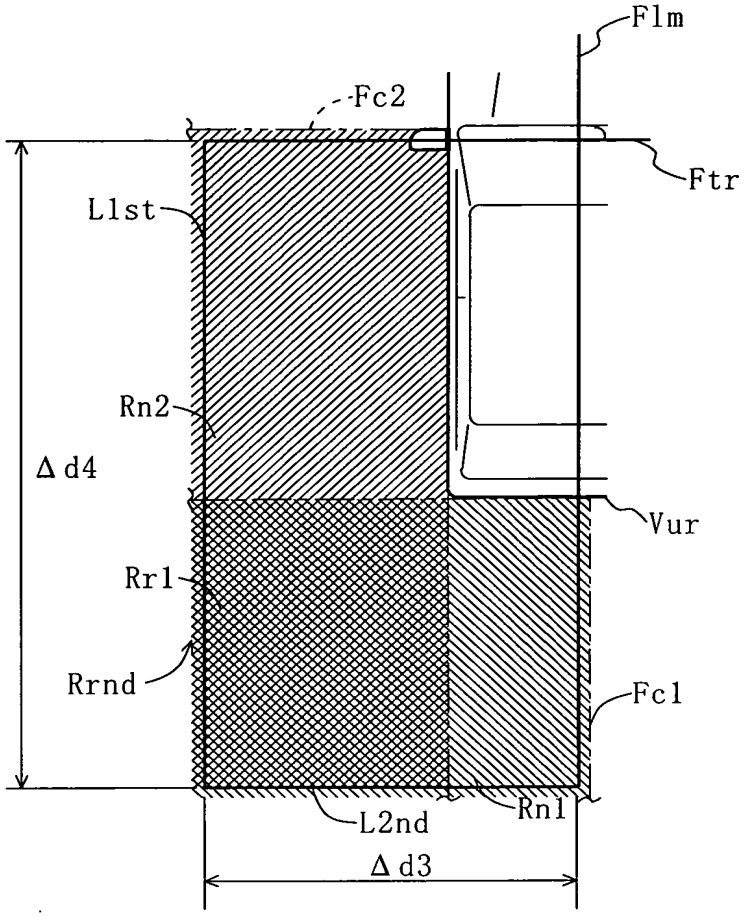

FIG. 9

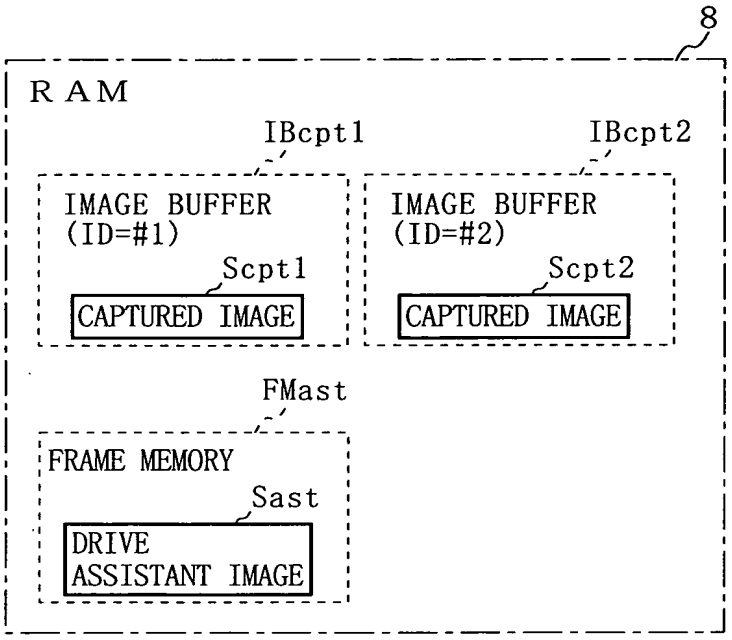
8
RAM
IBcpt1
IBcpt2
IMAGE BUFFER
(ID=#1)
Scpt1
CAPTURED IMAGE
IMAGE BUFFER
(ID=#2)
Scpt2
CAPTURED IMAGE
FMast
FRAME MEMORY
Sast
DRIVE
ASSISTANT IMAGE

FIG. 10

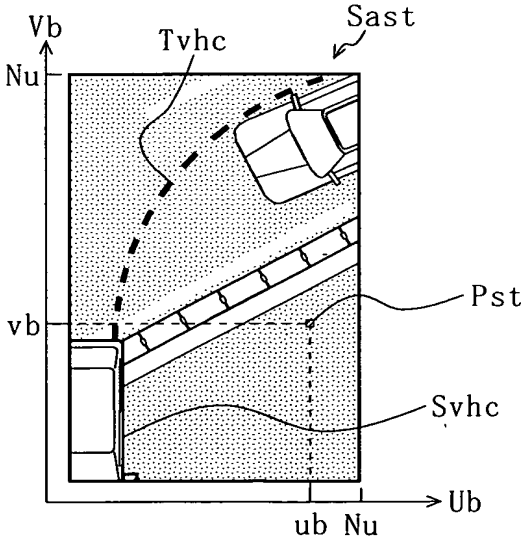
Vb
Tvhc
Sast
Nu
Pst
vb
Svhc
Ub
ub Nu

FIG. 11

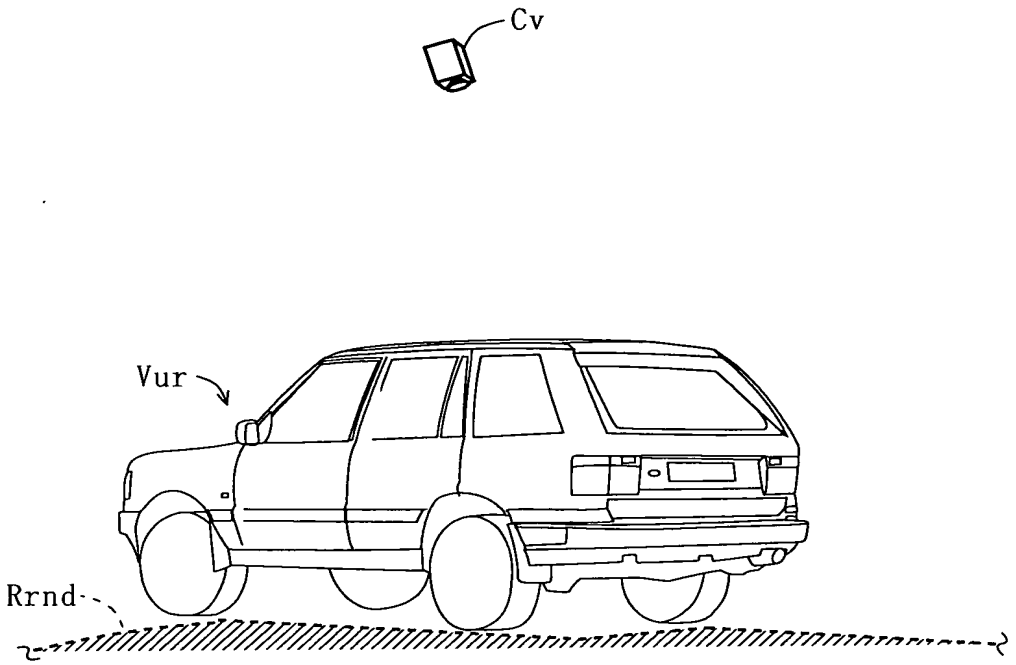
Cv
Vur
Rrnd

FIG. 12

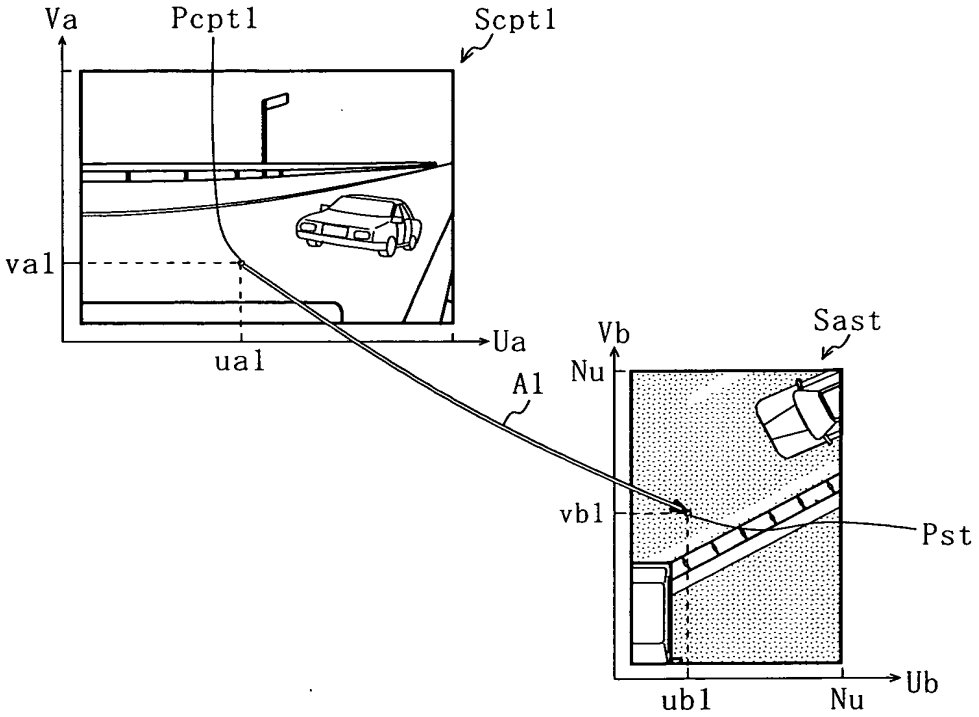
Va
Pcpt1
Scpt1
val
ua1
Ua
Vb
Nu
Sast
A1
vb1
Pst
ub1
Nu
Ub

FIG. 13

Tmp

RECORD TYPE Trcd	COORDINATE VALUES (ub, vb)	ID NUMBER ID	COORDINATE VALUES (ua, va)	RUDDER ANGLE RANGE Rrng	BLENDING RATIO Rbrd	
⋮	⋮	⋮	⋮	⋮	⋮	Nu × Nv (PIXEL)
1	(501, 109)	#2	(551, 303)	–	1	Rnt
⋮	⋮	⋮	⋮	⋮	⋮	
2	(324, 831)	#1	(1011, 538)	Rrng1; $0 \leqq \rho \leqq \rho th$, $\rho th = \Delta \rho$	Rbrd1=0	Rnt
				Rrng2; $\rho th < \rho$, $\rho th = \Delta \rho$	Rbrd2=1	
		#2	(668, 629)	Rrng1; $0 \leqq \rho \leqq \rho th$, $\rho th = \Delta \rho$	Rbrd3=1	
				Rrng2; $\rho th < \rho$, $\rho th = \Delta \rho$	Rbrd4=0	
⋮	⋮	⋮	⋮	⋮	⋮	
2	(971, 1043)	#1	(1189, 999)	Rrng1; $0 \leqq \rho \leqq \rho th (=2 \times \Delta \rho)$	Rbrd1=0	Rnt
				Rrng2; $\rho th (=2 \times \Delta \rho) < \rho$	Rbrd2=1	
		#2	(1135, 798)	Rrng1; $0 \leqq \rho \leqq \rho th (=2 \times \Delta \rho$	Rbrd3=1	
				Rrng2; $\rho th (2 \times \Delta \rho) < \rho$	Rbrd4=0	
⋮	⋮	⋮	⋮	⋮	⋮	

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FIG. 14

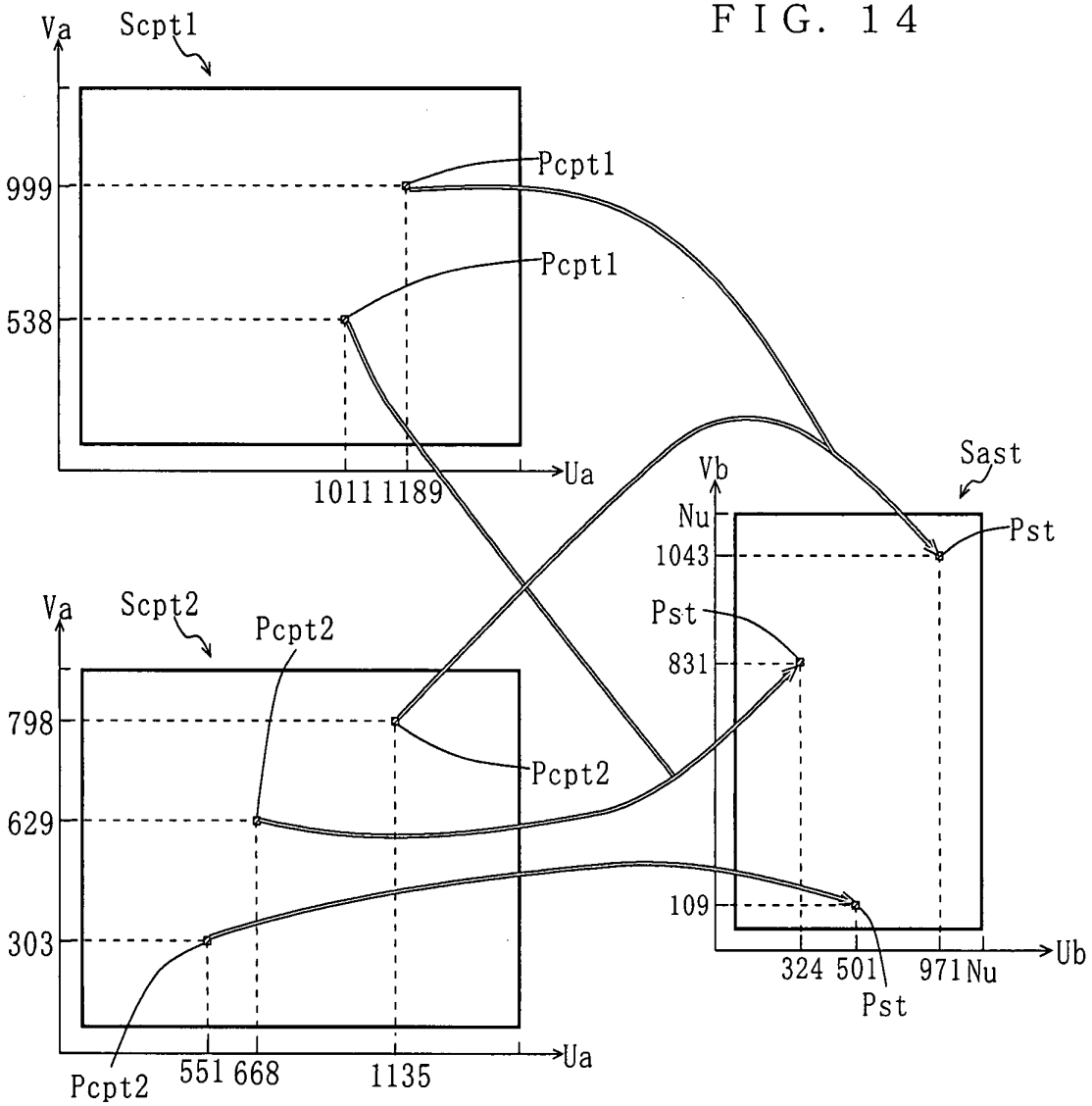

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FIG. 15A

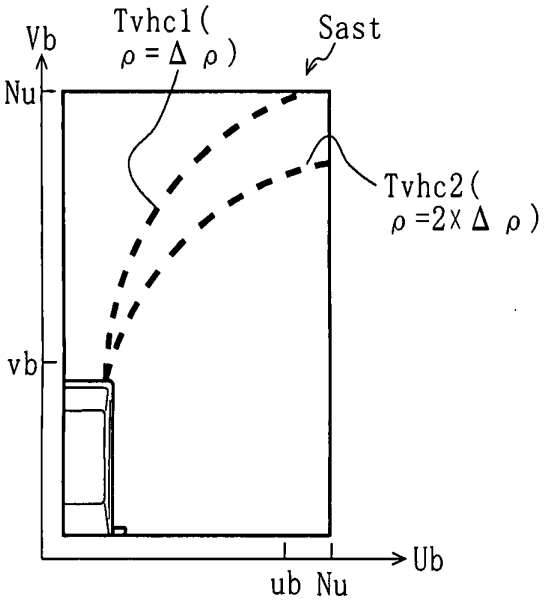

FIG. 15B

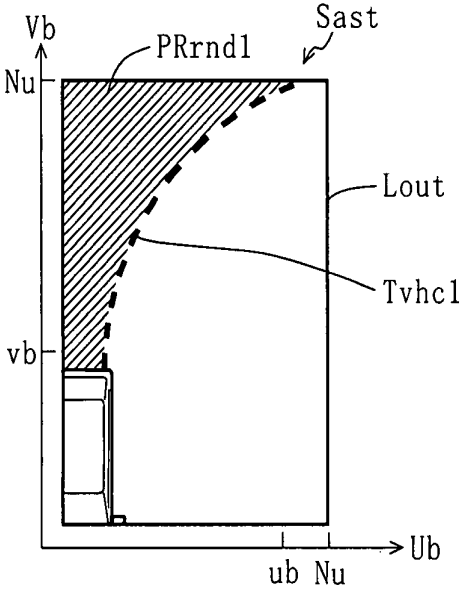

FIG. 15C

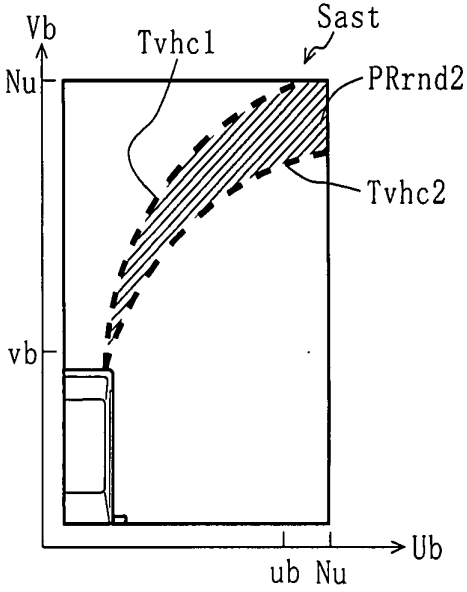

FIG. 16

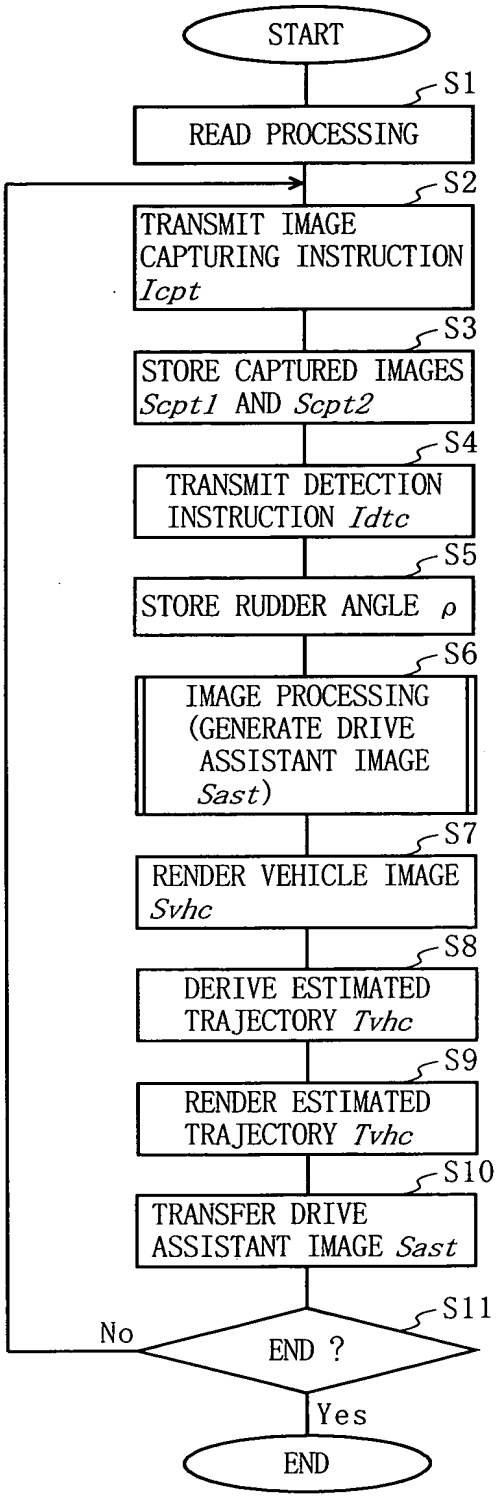
START
S1
READ PROCESSING
S2
TRANSMIT IMAGE CAPTURING INSTRUCTION *Icpt*
S3
STORE CAPTURED IMAGES *Scpt1* AND *Scpt2*
S4
TRANSMIT DETECTION INSTRUCTION *Idtc*
S5
STORE RUDDER ANGLE ρ
S6
IMAGE PROCESSING (GENERATE DRIVE ASSISTANT IMAGE *Sast*)
S7
RENDER VEHICLE IMAGE *Svhc*
S8
DERIVE ESTIMATED TRAJECTORY *Tvhc*
S9
RENDER ESTIMATED TRAJECTORY *Tvhc*
S10
TRANSFER DRIVE ASSISTANT IMAGE *Sast*
S11
No
END ?
Yes
END

FIG. 17

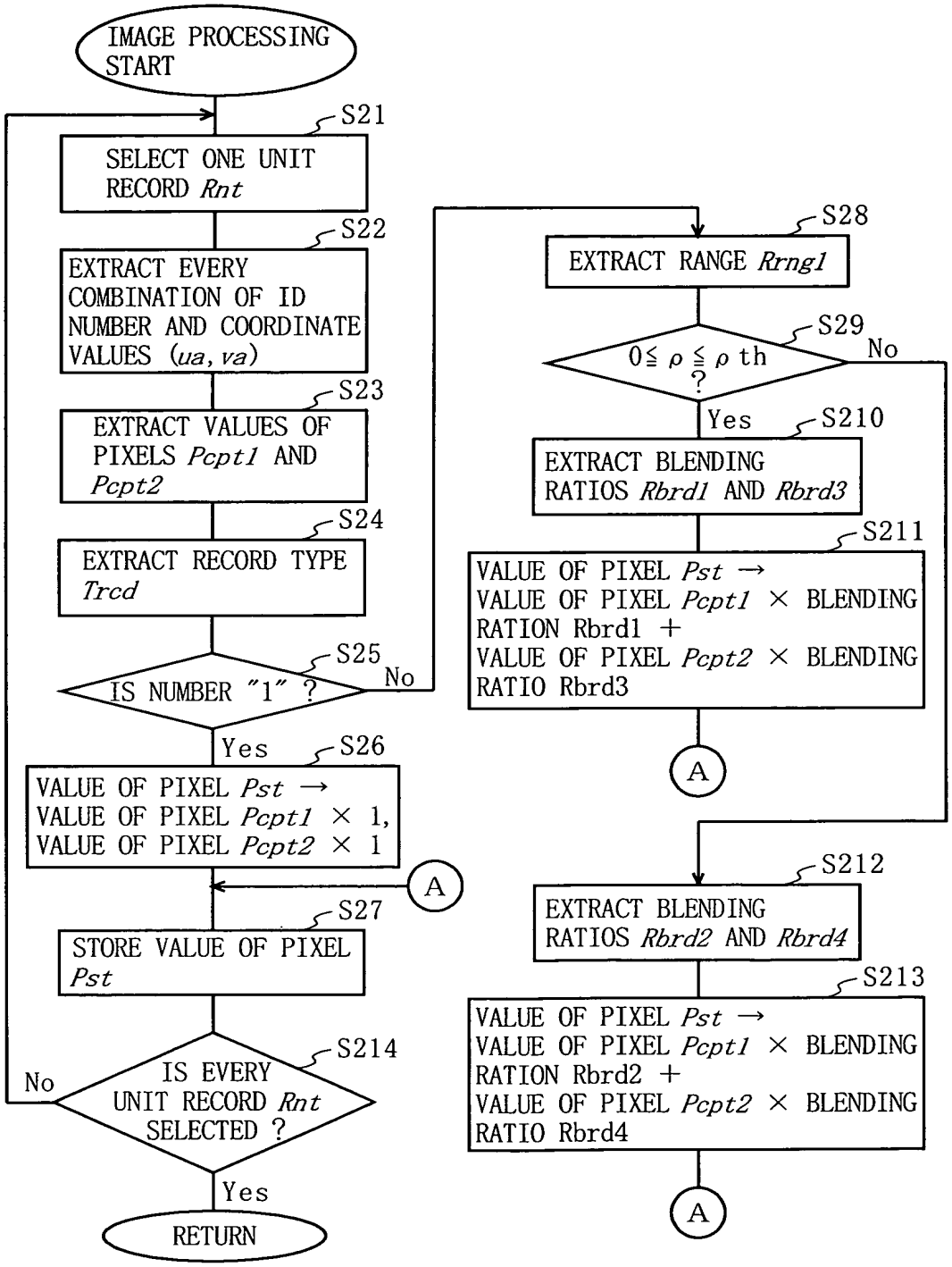
IMAGE PROCESSING START
S21
SELECT ONE UNIT RECORD *Rnt*
S22
EXTRACT EVERY COMBINATION OF ID NUMBER AND COORDINATE VALUES (*ua*, *va*)
S23
EXTRACT VALUES OF PIXELS *Pcpt1* AND *Pcpt2*
S24
EXTRACT RECORD TYPE *Trcd*
S25
IS NUMBER "1" ?
No
Yes
S26
VALUE OF PIXEL *Pst* → VALUE OF PIXEL *Pcpt1* × 1, VALUE OF PIXEL *Pcpt2* × 1
A
S27
STORE VALUE OF PIXEL *Pst*
S214
IS EVERY UNIT RECORD *Rnt* SELECTED ?
No
Yes
RETURN
S28
EXTRACT RANGE *Rrng1*
S29
0≦ ρ ≦ ρ th ?
No
Yes
S210
EXTRACT BLENDING RATIOS *Rbrd1* AND *Rbrd3*
S211
VALUE OF PIXEL *Pst* → VALUE OF PIXEL *Pcpt1* × BLENDING RATION Rbrd1 + VALUE OF PIXEL *Pcpt2* × BLENDING RATIO Rbrd3
A
S212
EXTRACT BLENDING RATIOS *Rbrd2* AND *Rbrd4*
S213
VALUE OF PIXEL *Pst* → VALUE OF PIXEL *Pcpt1* × BLENDING RATION Rbrd2 + VALUE OF PIXEL *Pcpt2* × BLENDING RATIO Rbrd4
A

FIG. 18 PRIOR ART

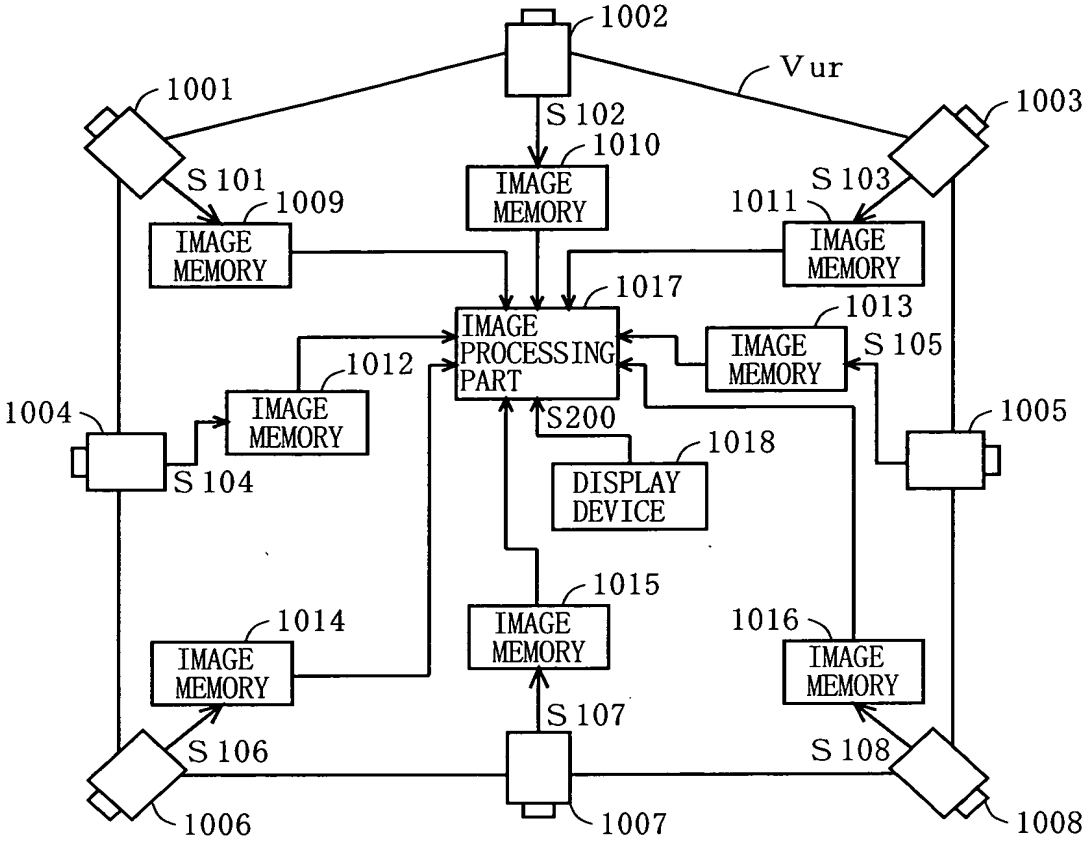

FIG. 19 PRIOR ART

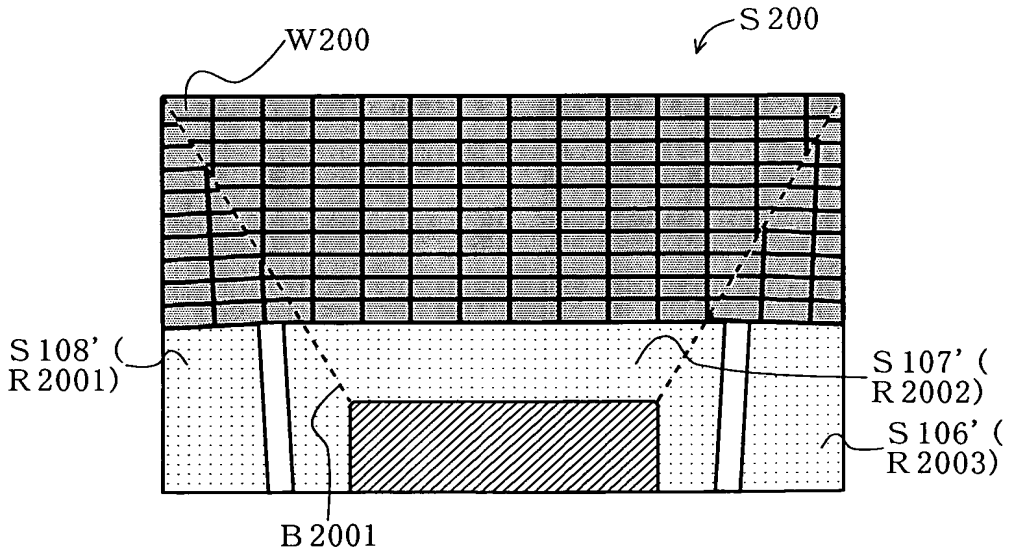

FIG. 20A PRIOR ART

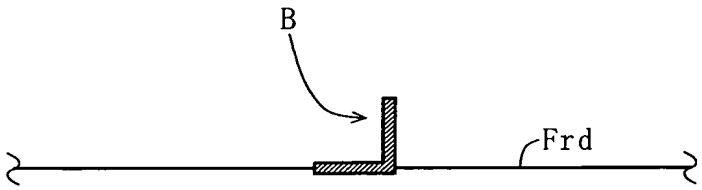
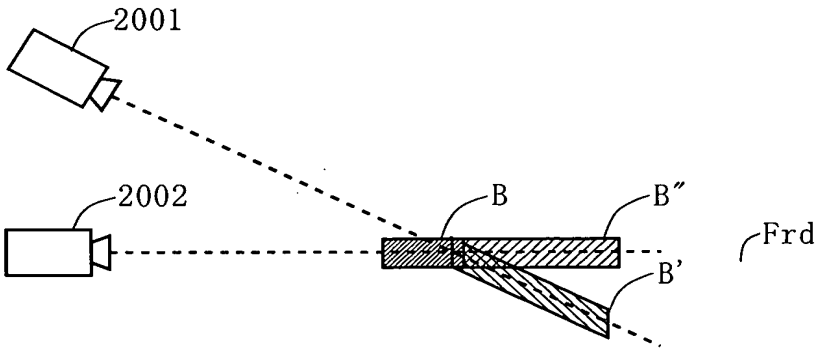
FIG. 20B PRIOR ART